

Figure 1

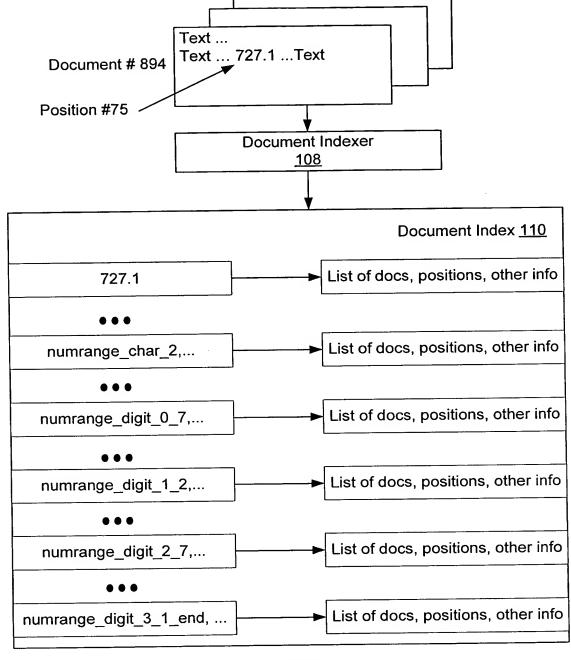


Figure 2

Numerical Index Term 300

fieldname	digit position	digit value	end flag	, –	neg characteristic flag	other Info	
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Figure 3

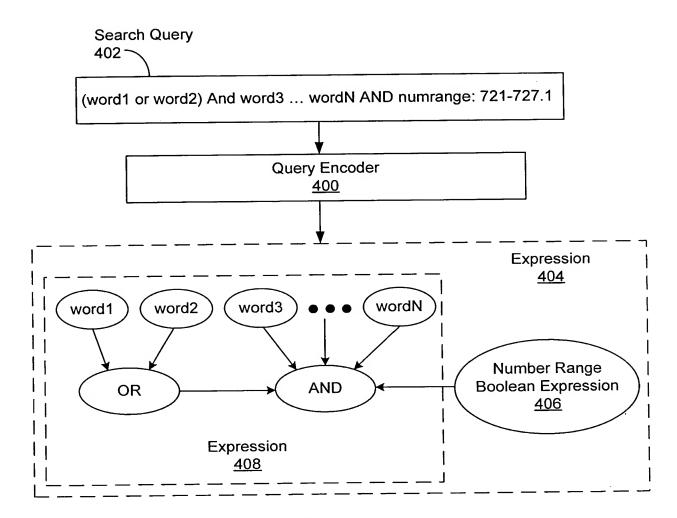


Figure 4

```
Boolean Expression Tree 406
AND:
|----numrange_character_2
|----numrange_digit_0_7
|----numrange_digit_1_2
                              ----- Level 2
|----OR:
     |---numrange_digit_2_1
     |---numrange_digit_2_1_end
     |---numrange_digit_2_2
     |---numrange_digit_2_2_end
     |---numrange_digit_2_3
     |---numrange_digit_2_3_end
     |---numrange_digit_2_4
     |---numrange_digit_2_4_end
     |---numrange_digit_2_5
     |---numrange_digit_2_5_end
     |---numrange_digit_2_6
     |---numrange_digit_2_6_end
     |---numrange_digit_2_7_end
                                    ----- Level 3
     |---AND:
          |---numrange_digit_2_7
                                      ----- Level 4
          I---OR:
               |---numrange_digit_3_0
               |---numrange_digit_3_1_end
```

```
AND:
 |---<fieldname>_characteristic_2
  ---OR:
      ---AND:
         |---<fieldname>_digit_0_1
          ---OR:
                --AND:
                  |---<fieldname>_digit_1_8
                    --OR:
                       |---<fieldname>_digit_2_9
'---<fieldname>_digit_2_9_end
      |---<fieldname>_digit_1_9
|---<fieldname>_digit_1_9_end
|---<fieldname>_digit_0_2
|---<fieldname>_digit_0_2_end
|---<fieldname>_digit_0_3
       ---<fieldname>_digit_0_3_end
       ---<fieldname>_digit_0_4_end
       ---AND:
           |---<fieldname>_digit_0_4
           ---<fieldname>_digit_1_0
          '---OR:
               ---<fieldname>_digit_2_0
---<fieldname>_digit_2_1
---<fieldname>_digit_2_1_end
               ---<fieldname>_digit_2_2
               ---<fieldname>_digit_2_2_end
               ---<fieldname>_digit_2_3
               ---<fieldname>_digit_2_3_end
               ---<fieldname>_digit_2_4
---<fieldname>_digit_2_4_end
---<fieldname>_digit_2_5_end
```

Figure 6

```
OR:
   --AND:
      |---<fieldname>_characteristic_2
           ---AND:
               ---<fieldname>_digit_0_1
               i---OR:
                    ---<fieldname>_digit_1_5
                    ---<fieldname> digit 1_5_end
                    ---<fieldname>_digit_1_6
                   |---<fieldname>_digit_1_6_end

|---<fieldname>_digit_1_7

|---<fieldname>_digit_1_7_end

|---<fieldname>_digit_1_8

|---<fieldname>_digit_1_8_end

|---<fieldname>_digit_1_9
                      --<fieldname>_digit_1_9_end
            ---<fieldname>_digit_0_2
           ---<fieldname>_digit_0_2_end
---<fieldname>_digit_0_3
---<fieldname>_digit_0_3_end
           ---<fieldname>_digit_0_8
           ---<fieldname>_digit_0_8_end
            ---<fieldname>_digit_0_9
            ---<fieldname> digit_0_9_end
   ---<fieldname>_characteristic_3 |---<fieldname>_characteristic_3_end
---<fieldname>_characteristic_4 |---<fieldname>_characteristic_4_end
   ---<fieldname>_characteristic_5 |---<fieldname>_characteristic_5_end
  |---<fieldname>_characteristic_78 |---<fieldname>_characteristic_78_end
|---<fieldname>_characteristic_79 |---<fieldname>_characteristic_79_end
   ---<fieldname>_characteristic_80_end
```

Figure 7

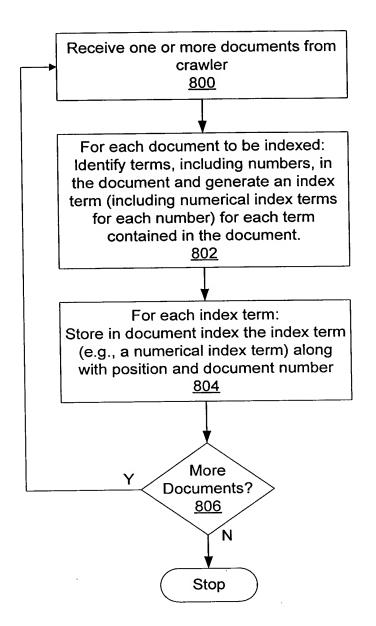


Figure 8

Receive a search query that includes at least one number range search query 900

Convert the search query into an expression representing a logical combination of the terms in the search query, including generating for each number range search query an expression of one or more numerical index terms based on the corresponding number range boundary numbers

902

Search index to identify documents corresponding to each term in the expression. Combine the search results for the individual search terms in accordance with the expression to produce a query result. The documents identified by the query result contain numbers that that satisfy the number range search query or queries.

904 Stop

Figure 9

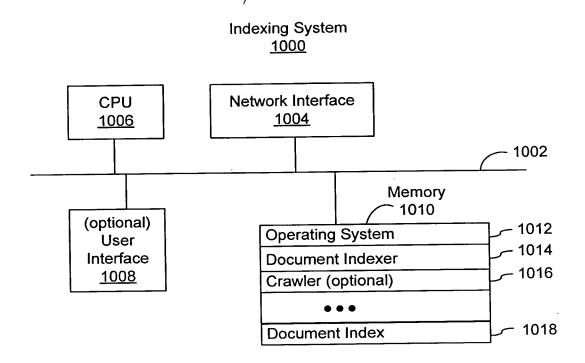


Figure 10

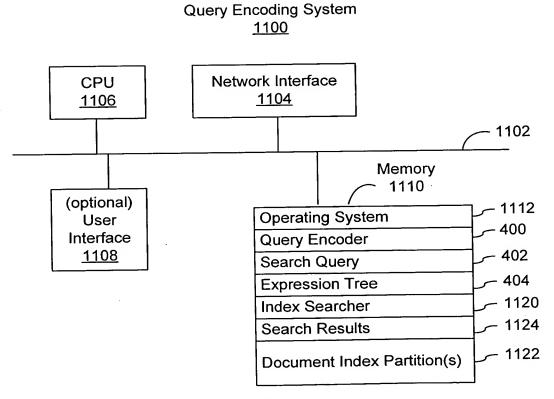


Figure 11